

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
6 May 2005 (06.05.2005)

PCT

(10) International Publication Number
WO 2005/040546 A1

(51) International Patent Classification⁷: E21B 7/18, 10/60

(71) Applicant (for CA only): SHELL CANADA LIMITED [CA/CA]; 400 - 4th Avenue S.W., Caglary, Alberta T2P 2H5 (CA).

(21) International Application Number:

PCT/EP2004/052677

(72) Inventor; and

(22) International Filing Date: 27 October 2004 (27.10.2004)

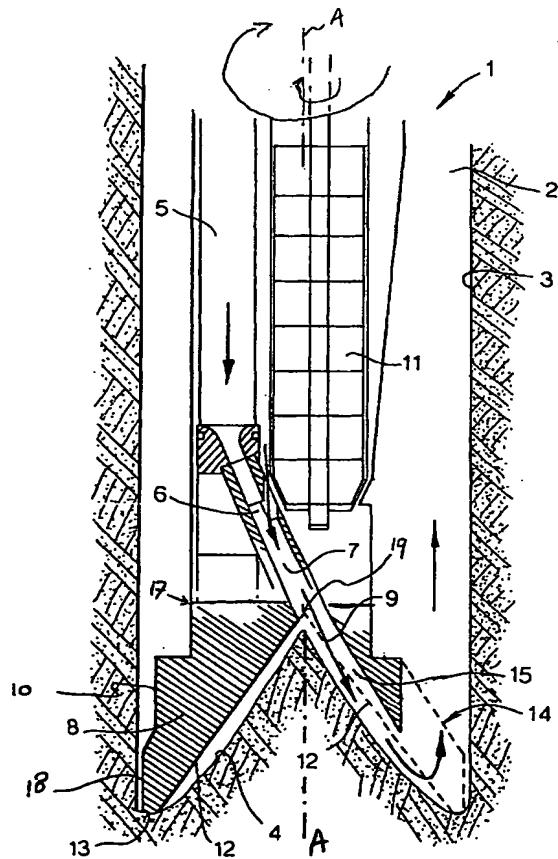
(75) Inventor/Applicant (for US only): BLANGÉ, Jan-Jette [NL/NL]; Kesslerpark 1, NL-2288 GS Rijswijk (NL).

(25) Filing Language: English

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

[Continued on next page]

(54) Title: FLUID JET DRILLING TOOL



(57) Abstract: The invention features an excavating device (1) for excavating a hole (2) in a geological formation, which excavating device (1) comprises: a body rotatable inside the hole (2) along a rotation axis; a nozzle (7) arranged on the body to jet a stream of an abrasive fluid (9) onto a surface (4) in the geological formation in order to generate the hole (2), wherein the stream has at least an radial velocity component and one parallel to the rotation axis. The excavating device further comprises: a distance holder (8, 38) arranged on the body to ensure a predefined distance between the nozzle (7) outlet and the surface (4); wherein the distance holder (8, 38) has a trumpet shaped inner surface section (12) facing the geological formation, which trumpet shaped inner surface section (12) is provided with an opening (16) for allowing the stream (9) to pass through. The opening (16) in the trumpet shaped inner surface section (12) is defined by a recess (15) that is formed in the inner surface (12) of the wall of the distance holder (8, 38), whereby the nozzle is arranged to discharge in the recess. The invention also features a distance holder (8, 38) such as described above.

WO 2005/040546 A1



- (84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *with international search report*